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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,191	01/09/2001	Mitsuo Inoue	201841US2	5684

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EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/756,191

Applicant(s)

INOUE ET AL.

Examiner

Gevell Selby

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see the amendment, filed 7/9/04, with respect to the rejection(s) of claim(s) 1-3 under 35 U.S.C. 102(e) and claim(s) 4-5 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Katayama et al., US 6,632,172.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura, US 5,940,126.**

In regard to claim 1, Kimura, US 5,940,126, discloses an imaging apparatus comprising:

an imaging device (see figure 4A) having a plurality of photoelectric transfer devices arranged in a matrix shape to detect a light irradiated to each photoelectric transfer device and transfer the light into an electric signal (see column 5, lines 1-11 and figure 4C: It is inherent that the CCD (300) has a plurality of photoelectric transfer devices arranged in matrix-shape in order to capture the 2-deminsional images in areas 301, 302, and 303 and display them on a monitor);

imaging means for imaging an image of a photogenic object (Figure 4A: camera's photographing areas combine to form a 270 degree wide angle camera photographing an area or object surrounding the camera) on a surface of the imaging device, the imaging means imaging at least two images (Figure 4C) of the photogenic subject onto different areas of the surface of the imaging device (see column 5, lines 1-11); and

electric signal processing means (see figure 1, element 123) for electrically synthesizing the at least two images of the photogenic object into one integrated image of the photogenic object (see figure 4C and column 5, lines 21-23).

In regard to claim 7, Kimura, US 5,940,126, discloses an imaging apparatus (see figure 4A) including an imaging device, the imaging device comprising:

a plurality of photoelectric transfer devices (see figure 4A, element 300) arranged in matrix-shape to detect light irradiated to each photoelectric transfer device and transfer the light into an electric signal (see column 5, lines 1-11 and

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figure 4C: It is inherent that the CCD (300) has a plurality of photoelectric transfer devices arranged in matrix-shape in order to capture the 2-deminsional images in areas 301, 302, and 303 and display them on a monitor);

a lens apparatus (see figure 4A, elements 201-203) configured to direct an image of a subject onto a surface of the imaging device, the lens apparatus directing at least three images of the subject onto at least three different areas of the surface of the imaging device (see column 5, lines 1-11); and

an electric signal processor (see figure 1, element 123) configured to form an integrated image of the subject from the at least three images of the subject (see figure 4C and column 5, lines 21-23)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. ^{and 6}
Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172.

In regard to claim 1, Igarashi, US 6,632,172, discloses an imaging apparatus comprising:

an imaging device having a plurality of photoelectric transfer devices arranged in a matrix shape to detect a light irradiated to each photoelectric transfer device and transfer the light into an electric signal (Figure 1., Abstract);

imaging means for imaging an image of a photogenic object (Figure 1, Element d) on a surface of the imaging device, the imaging means imaging at least two images (Figure 1) of the photogenic subject onto different areas of the surface of the imaging device (Figure 1, Element 8).

The Igarashi reference does not disclose an electric signal processing means for electrically synthesizing the at least two images of the photogenic object into one integrated image of the photogenic object.

Katayama et al., US 5,682,198, discloses an imaging apparatus comprising an electric signal processing means (see figure 1, element 18) for electrically synthesizing the at least two images of the photogenic object into one integrated image of the photogenic object (see column 7, lines 33-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, to have an electric signal processing means for electrically synthesizing the at least two images of the photogenic object into one integrated image of the photogenic object in order to in order to produce a high quality image from the two images while removing registration shift of the overlapping areas during the combining process as taught by Katayama (see column 2, lines 56-62).

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In regard to claim 2, Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, discloses all the limitations of claim 1. The Igarashi reference discloses that the imaging means is composed of a plurality of lens systems (Figure 1) having the same shape or refractive index (Column 6, Lines 50-65, n_1 , n_2 , 113 are 1.8830, Column 9, Line 43) and arranged in a plane parallel to a light receiving surface of the imaging device (Figure 1).

In regard to claim 3, Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, discloses all the limitations of claim 2. The Igarashi reference discloses that the image formation lenses composing each lens system are formed integrally (Figure 1).

Examiner reads "formed integrally" each system of lens formed as of one unit. In Figure 1, each system of lenses is formed together as one unit. Such is the case in Elements 1 (positive lenses) and 2 (negative lenses) in Figure 1

In regard to claim 6, Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, discloses all the limitations of claim 1. The Igarashi reference discloses that the imaging means includes a plurality of lens systems (see figure 1, elements 2 and 4 and column 6, lines 9-14), and an optical center of each of the plurality of lens systems is aligned axially with a center of a corresponding one of the plurality of photoelectric devices (see figure 4 and column 3, lines 37-41).

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, as applied to claim 1 above, and further in view of Nelson, US 5,237,340, in further view of Booth US 5,738,427.

In regard to claims 4 and 5, Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, discloses all the previous limitations in claim 2. The Igarashi and Katayama references do not disclose that a plurality of image formation lenses composing each lens system are formed integrally of material or bonded on a substrate having a linear expansion coefficient of not more than $1 \times 10^{-5}/^{\circ}\text{C}$. However, it is well known in the art that a high linear expansion coefficient in a lens will cause deformation of the lens, resulting in an unclear image. Pyrex lenses have a low linear expansion coefficient and thus can solve this problem as Nelson and Booth teach in the following:

Nelson teaches an integrally formed lens portion made of Pyrex glass (Column 5, Lines 60-69). Booth further teaches that Pyrex glass has a low linear expansion coefficient of not more than $1 \times 10^{-5}/^{\circ}\text{C}$ (Column 5 Lines 55-63).

The use of a low coefficient of linear expansion will allow for the rigid mounting of a lens and also the high change in temperature will not cause deformation of the lens and thus cause it to be out of focus.

By integrally forming the Pyrex lens of Nelson to the cover glass (Element 9, Igarashi), the image formation lenses composing the lens system would be formed of a material having a linear expansion of not more than $1 \times 10^{-5}/^{\circ}\text{C}$. The cover glass is also a substrate material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have been motivated to modify Igarashi, US 6,632,172, in view of Katayama et al., US 6,632,172, further in view of Nelson, US 5,237,340, and in further view of Booth US 5,738,427 to have a plurality of image formation lenses composing

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each lens system are formed integrally of material or bonded on a substrate having a linear expansion coefficient of not more than $1 \times 10^{-5}/^{\circ}\text{C}$ in order to be able to rigidly mount the lens and not have deformation of the lens resulting in an out of focus unclear image.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 703-305-8623. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gvs



TUAN HO
PRIMARY EXAMINER